

CASS

Cassava Agribusiness Seed Systems Project

PROJECT TIMELINES

- April 2019
Project inception
- July 2019
Project official launch
- March 2020
First project annual meeting
- March 2021
Second project progress review
- March 2022
Project end

PROJECT ESSENTIALS

- Duration**
3 years
- Countries**
Rwanda and Burundi
- Lead organisation**
International Institute of Tropical Agriculture (IITA)
- Main partner in Burundi**
Institut des Sciences Agronomiques du Burundi (ISABU)
- Main partner in Rwanda**
Rwanda Agriculture and Animal Resource Development Board (RAB)
- Other partners**
Spark and Wageningen University
- Total budget**
€1 million
- Donors**
Dutch Government - CGIAR collaboration

Newsletter

#2

Enabling agribusiness development for scaling quality cassava seed systems for control of major viral diseases in Rwanda and Burundi

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CASS

Introduction to the project

The Cassava Agribusiness Seed Systems (CASS) project is a three-year project implemented by the International Institute of Tropical Agriculture (IITA) as a lead partner, SPARK (an NGO focusing on nurturing business among the youth and women), Wageningen University and Research (WUR), Rwanda Agriculture and Animal Resources Development Board (RAB) and Institut des Sciences Agronomique du Burundi (ISABU). The project's overall objective is to select a diversity of cassava clones, resistant to Cassava Brown Streak Disease (CBSD) and Cassava Mosaic Disease (CMD), while responding to farmers' demand and make this material quality certified and available through agribusiness models. It aims to enable agribusiness development for easy access to quality cassava seed systems for control of major viral diseases in cassava in Rwanda and Burundi.

CASS builds on other initiatives under the IFAD funded CBSD Control Project focusing on the improved genetic diversity for CBSD/CMD dual resistance, as well as establishing systems, policy, and capacities for production and delivery of early

generation seeds in Rwanda and Burundi. The key impacts of the project will include control of cassava viral diseases resulting into higher on-farm root yields, food security and incomes. One of the key outputs of CASS project is to understand and respond to constraints and opportunities at farmer and institutional levels for upscaling CASS models in collaboration with different cassava value-chain actors.



Partnerships

CASS project is a consortium of five partner organizations, each with a set of outputs and related activities to implement and deliver on. This partnership has in-built sustainability and up scaling solutions of the project activities which, in turn, is envisaged to ensure impact beyond the project's direct zone of intervention and target beneficiaries.

IITA is the lead partner and ensures technical backstopping and



financial management of the project. IITA has been and is implementing a number of projects that leverage CASS with valuable experiences and technologies (e.g., promising varieties, clean pre-basic seed) and implementation infrastructure (e.g., screen houses, laboratories).

RAB and ISABU test and profile promising varieties, ensure multiplication of pre-basic seed, and provide technical training to seed multipliers at different stages of the value chain, on best production and disease management practices.

SPARK, an NGO that has strong competencies in agri-business and entrepreneurship analysis and development around the world (over 15 countries), supports the project in strengthening the capacity of farmers, cooperatives and partner organizations through gender and youth-sensitive training and coaching. Additionally, SPARK's contribution involves testing of new cassava agribusiness models with different groups of farmers or individual seed entrepreneurs.

Last but not least is the WUR that is co-leading the project's scientific activities through the development of typologies of cassava farmers, their demands, and capacities to invest in high quality cassava

planting materials. Additionally, WUR scientifically tests the effectiveness of different cassava seed agri-business models, for their capacity to cost-effectively deliver high quality planting materials to these different categories of farmers. WUR is also leading the analysis of institutional barriers and opportunities (e.g. in policy or certification) for scaling up different seed systems agribusiness models.



Project inception and kick off

The CASS project officially started operations in April 2019, with an inception meeting involving the core partners i.e., IITA, SPARK, WUR, RAB and ISABU. The meeting helped to align year one work plans while ensuring synergies and teamwork. Later in July, country level kick-off meetings gathered all stakeholders and partners involved in the project implementation in both Rwanda and Burundi, to create awareness about the project's mission, objectives, expected outcomes, and deliverables.

The kick-off workshops aimed at actively engaging key stakeholders and experts in the cassava and seed sector. Furthermore, the meetings identified key bottlenecks and opportunities towards ensuring access to disease resistant cassava varieties in the two

countries. In addition, participants shared ideas on how to overcome key bottlenecks, and develop innovative cassava seed agribusiness models in Rwanda and Burundi.

Among the bottlenecks identified, both in Burundi and Rwanda, farmers pointed out to have poor access to quality cassava planting materials, the lack of collaboration between stakeholders in the cassava seed sector leading to an absence of understanding of the market demand for cassava roots, and lack of financial resources.

Participants were given opportunity to design business models that they believe can solve the existing challenges in commercial and sustainable way. All the business models suggested had similar key success drivers such as agreement with multipliers, contracts before production, certification, price regulation, and regulation of the entire cassava seed value chain.

Progress: Year 2 of the project

April 2020 - March 2021

CASS project is being implemented by a consortium of five partners (IITA, RAB, ISABU, SPARK, and WUR) since April 2019. It is currently under the phase of activities' implementation as per partners' respective workplans. Key project activities planned under Year two can be classified into three main components: variety documentation and release, knowledge generation and sharing, and roll out of (CASS) business models testing. Whereas IITA, SPARK and WU each lead a component of the project, RAB and ISABU are the national research partners that help with technical implementation of the

project. They also help adapt the processes and techniques innovated by the project for scaling and sustainability outcomes.

Moreover, IITA ensures technical support and management of the entire project. Before going into achievements and progress in detail, it is important to note that implementation of activities in year two has been significantly disrupted and negatively affected by the global outbreak of Coronavirus pandemic. Unfortunately, this situation persisted throughout the year until today. Below is a summary of progress made under each component during year two.

i. Variety testing, documentation, and release:

This project component aimed to diversify the availability of cassava varieties with strong resistance or tolerance to CBSD and CMD and meet farmer and commercial end user preferences. To achieve the above objective, the project promised to profile near release materials from CBSD Control Project and on-going national research program. This has been achieved and up to six varieties have been approved for official release in both countries. In Rwanda, the approved varieties were named by the farmers during an event attended by various stakeholders including farmers, development partners, and local and central government officials (Fig.1).

Gikungu, Buryohe, Nsizebashonje, Tebuka, Biseruka and Tegereza are the names given to the six varieties. The event was officiated by high level officials from the Ministry of Agriculture and Animal Resources (MINAGRI) and local government i.e., Hon. Minister of state at MINAGRI and Hon. Governor of Southern Province, respectively. In Burundi the approval of varieties was made by



Fig.1: Hon. State Minister in charge of Agriculture and Hon. Governor of Southern Province officiate the cassava varieties naming ceremony in Nyanza, Southern Province

Office National de Contrôle et Certification de Semence (ONCCS), a mandated body to verify and approve any crop varieties before dissemination to the farmers.

Further, the project has introduced two sets of elite clones for adaptability testing. The first set comprised of 20 CBSD immune clones, from which 12 and 6 clones were eventually tested in the field in Rwanda and Burundi, respectively. A number of clones failed to make it to trial field due maintenance challenges in tissue culture laboratories and acclimatization in the screen house. The second set comprised of 10 elite clones introduced from IITA UG/TZ breeding platform but have been received only in Rwanda. All the ten clones have been hardened and established in the field for propagation to raise stem cuttings to establish multi-site evaluation trials in October 2021. At the same time, arrangements to send SAH plantlets to Burundi are ongoing.

ii. Knowledge generation and sharing:

Data analysis was done for the farmer typology - Rural Household Multi-Indicator Survey (RHoMIS) - and seed network analysis surveys. Data for the two studies had been collected in Year One. Results from the two studies have been linked and used to develop a scientific paper that aims to shed light on the cassava seed acquisition practices of different farmer typologies in both Rwanda and Burundi. The paper is ready for submission to journals for publication. The findings and insights from the studies are also

being used to inform the testing of tailored business models that were developed by the project and will be used to inform the scaling of the same business models.

Single nucleotide polymorphisms (SNPs) analysis was conducted for samples collected during the finger printing survey reported last year. Preliminary analysis has been conducted and the process for manuscript drafting initiated. A scientific paper is expected to be published from this study.

iii. Cassava seed system (CASS) business models:

At the end of Year One, project partners had just identified the types of business models (BM) to be tested in each country (Tab.1). There were three business models for Rwanda namely Cassava seed private company led business model, Cassava processors led business model, and Cassava seed community Entrepreneurs Led Business model. In Burundi, there were two BM namely Cassava seed private led business model and Cassava products processors led business model. Year-two started with identification of business cases - a business/enterprise who could be capacitated to influence and or drive seed production and dissemination around their area of influence in terms of farming, agri-business, and geography. The following are the selected business cases for each BM for the two target countries.

Table 1: Business models and related business cases

Country	Private company-led BM	Processor-led BM	Community Entrepreneurs-led BM
Rwanda	1.INGABO Syndicate	1.KINAZI Cassava Plant (KCP) 2.KIAI cooperative	1.CDAN cooperative
Burundi	1.Richards enterprises 2.KUNDIBIKORWA Cooperative	1.Buseruko Rugaju Cooperative 2.Kerebuka Turwanyinzara cooperative	



Fig. 2: A participant presenting group work in training session under processor led business model

After business cases identification, capacity needs assessment (CNA) was conducted for each business case to identify areas that needed to be strengthened for the business case to perform properly and achieve their objectives, hence project objectives too. CNA was followed by development of capacity development plans. The latter were the basis for developing training and proximity coaching trajectory to be followed throughout the business model development and testing phase.

From the CNA, four areas were identified as key for CASS models namely i) cooperative/business management, leadership, and governance; ii) Financial management; iii) Farming as business, marketing, and access to market; and iv) entrepreneurship. Memorandum of Understanding (MoUs) have already been signed between SPARK and business cases and some business cases are currently looking to sign business agreements/contracts with other business actors in the value chain.

Capacity development through training and proximity coaching is currently mid-way through to completion and has already reached a good number of potential seed entrepreneurs. **In Rwanda, 144 potential seed entrepreneurs (89 men and 55 women) have been trained while 86 (52 men and 34 women) also have received the same training in Burundi (Fig. 2).**

These are expected to get actively engaged and involved in seed production and dissemination both individually and as groups. Year three will mainly focus on performance of business cases and evaluation of BM performance in general, which will generate evidence for what works for scaling up across the target countries.



Other achievements

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 The project supported the production of early generation seed (EGS) through various efforts in the two countries. In year one, for the first time in Rwanda, the project had supported the initiation of use of Semi-Autotrophic Hydroponics (SAH) technology to support

rapid propagation of pre-basic seed. In year two, the technology was fully adapted to the local environment and used for rapid multiplication of pre-basic seed, backing up tissue culture multiplication as well as increasing the speed of hardening towards



Fig.3: Semi-Autotrophic hydroponics (SAH) technology in use at RAB Rubona Station



Fig.4: New screen house constructed by CASS Project in Moso (Burundi) Research Station already in use

field multiplication (Fig. 3). Subsequently, screenhouses were used to produce **3,435 and 22,525 plantlets of different varieties in Burundi and Rwanda**, respectively. At the subsequent level of basic seed, cassava research programs and four supported basic seed centers in each country, run by private seed entrepreneurs, produced **467,000 and 1,200,000 of basic seed cuttings**, respectively. The final level of certified seed and quality declared seed (QDS) is yet to be produced in the two countries because there was no clean EGS yet. This is planned in year three.

- ✓ A new screen house was constructed in Moso research station in Burundi and is ready for use in order to increase production capacity for pre-basic seed (Fig. 4).
- ✓ In Rwanda, twenty-four (24) on-farm trials to demonstrate yield benefits of using clean seed have been established in farmers' fields across main cassava agro-ecologies. Similar trials will be established in Burundi next season.
- ✓ WU in collaboration with IITA is responsible for identification and provision of supervisory support to four MSc students

under CASS project. In year two, we developed and advertised competitive calls for students from the University of Rwanda, Wageningen University, and different universities in Burundi. We were able to recruit two students (from WUR & University of Rwanda) and other two will be selected from ongoing applications. We have been working with universities to provide supervisory support to students including development of research proposals, data collection tools, etc. The two recruited students are working on the following topics:

- MSc WUR: Farmers' motivations for their seed acquisition practices. A case of Rwandan cassava farmers.
 - MSc UR: Cost-benefit analysis of pre-basic and basic seed production in Rwanda
- ✓ Despite the challenges of COVID-19, project partners were able to organize successful virtual annual stakeholder meetings in both countries. The partners took stock of progress, updated other stakeholders about progress, and discussed with stakeholders what to focus on in the remaining period.



Up Next

- ✓ Variety evaluation is ongoing and will continue in both countries for variety selection by the NARS. Special effort will be made to initiate trials with Kanju's 10 elite clones in both countries.
- ✓ In both Rwanda and Burundi, cassava seed standards were instituted recently and there are still challenges with operationalizing them at different levels of seed production. We will continue to support the operationalization of these standards by engaging relevant stakeholders e.g., farmers, extension services, and seed quality regulating agencies.
- ✓ For the on-going demo plots on yield benefits from using clean seeds in Rwanda, data will be collected according to protocols and field days conducted for farmers to visually evaluate the crop's agronomic yield performance. The plots are also planned for Burundi while more plots will be established in Rwanda.
- ✓ We anticipate that COVID-19 pandemic will regress during this year and it becomes safer to hold meetings and gatherings, project partners are planning to conduct both individual and joint stakeholder engagement activities for greater involvement of stakeholders as well as seeking buy-in for scale up after project completion. Internally, the COVID-19 assumption will also allow cross-learning through exchange visits within and between country teams.
- ✓ Capacity building trajectory enhancement of business cases under identified cassava seed business models will continue through coaching by focusing on financial management, access to finance and financial linkages. The coaching sessions to the business cases will also cover seed production knowledge and practices, as well as requirements and processes for seed inspection and certification by the seed regulator.
- ✓ Youth agribusiness incubations will be initiated and supported to incubate business plans that respond to opportunities within the cassava seed value chains.
- ✓ Complete and submit at least two papers to peer-reviewed journals for publication.
- ✓ Continue to provide supervisory support to the two identified MSc students and competitively select the remaining two and provide the same support to them. Students will also be supported as much as possible to publish their research results.

The CASS team



Dr. Silver
TUMWEGAMIRE

Dr. Silver Tumwegamire is a Cassava Breeder and Seed Systems Expert working with IITA and based in Kampala, Uganda. Tumwegamire leads the overall project implementation and the project's technical activities, and brings into the project existing good partnerships with national researchers and other actors in the cassava sector. He also leads another project 'Fighting Cassava Brown Streak Disease and Cassava Mosaic Disease through the Deployment of New Resistant Germplasm and Clean Seed in Burundi and Rwanda' to which CASS is building on and leveraging. He has a rich experience, spanning nearly 20 years, of working in CGIAR-NARS partnerships for research delivery.

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Ms. Sylvie
BAMBARA

Ms. Sylvie Bambara is the Agribusiness Programme Manager of CASS (Cassava Agribusiness Seed System) Project at SPARK. Sylvie leads the project to test the commercially based supply chain models for multiplying and distributing quality assured cassava seeds in both Rwanda and Burundi. She also leads the capacity strengthening through training and proximity coaching of the farmers, cooperatives, and private partners involved in a gender and youth sensitive way. Sylvie is also the Agribusiness Programme Manager for the IPoVAF (Irish Potato Value Chain Financing) Project, another project under SPARK in Rwanda.

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Ms. Fleur
KILWINGER

Ms. Fleur Kilwinger is a PhD candidate at the Knowledge, Technology and Innovation group, Department of Social Sciences of Wageningen University in the Netherlands. She obtained a master degree in Plant Sciences at the same university and a bachelor degree in Applied Biology at the HAS in 's-Hertogenbosch. One of the main objectives of her PhD research is to test, evaluate, and improve research methods to understand seed systems. During her PhD she collaborates with the CGIAR Research Program on Root, Tuber and Banana and one of the NWO-CGIAR Seed System Development projects: Cassava Agribusiness Seed Systems (CASS) in Rwanda and Burundi. Fleur supports the implementation of research activities and knowledge generation and sharing under CASS project.

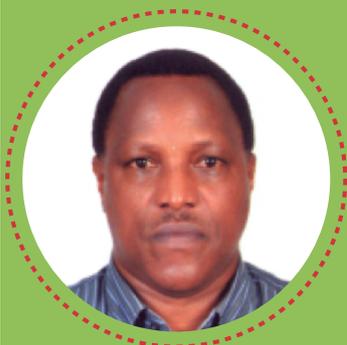
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Dr. Athanase
NDUWUMUREMYI

Dr. Nduwumuremyi Athanase is a leading scientist working with Rwanda Agriculture and Animal Resource Development Board (RAB). Nduwumuremyi is based in Rwanda at Rubona Research station where he is the Country Leader of cassava research and technology transfer program. He is the Country Contact for CASS Project in Rwanda as well as IFAD-IITA funded project focusing on controlling cassava brown streak disease (CBSD) and Cassava Mosaic Disease (CMD). He is also the Principal investigator of IFAD-PASP/ cassava component project, which aims at increasing farmers' access to cassava clean planting materials. Dr. Nduwumuremyi co-leads the project activities in Rwanda and ensures embedding and sustainability of the project activities and is essential for scaling-up the project's outcomes to ensure impact beyond the project's direct zone of influence and beneficiaries.

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Mr. Simon
BIGIRIMANA

Mr. Bigirimana Simon is a senior scientist working with the Institut des Sciences Agronomiques du Burundi (ISABU). He is leading the cassava programme from 1998 to present. He is the country contact for CASS Project in Burundi as well as IFAD-IITA funded project focusing on controlling cassava brown streak disease (CBSD) and Cassava Mosaic Disease (CMD). Simon co-leads the project activities on the ground in Burundi and ensures embedding and sustainability of the project activities and is essential for scaling-up the project's outcomes to ensure impact beyond the project's direct zone of influence and beneficiaries.

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